

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of the Claims:**

1-25. (Canceled)

26. (Currently Amended) A method of ~~separating a ceramic component~~recovering a metal rich fraction from a metal-ceramic based composite, the method including the steps of increasing the size of at least the ceramic component within the metal-ceramic based composite by heating the metal-ceramic based composite, crushing the metal-ceramic based composite to  
5 reduce the size of the metal rich fraction in the composite in comparison to the ceramic fraction in the composite, and then separating of the increased sized ceramic component from the other components of the crushed composite to result in a metal rich fraction.

27. (Original) The method according to claim 26 wherein the metal based composite is heated to a temperature of between about 1500°C and about 1650°C.

28. (Original) The method according to claim 26 wherein the metal based composite is held at a temperature of between 1500°C and 1650°C for a time of between about 0.5 hours and about 10 hours.

29. (Original) The method according to claim 26 wherein the component increases in size to between about 15µm and about 100µm.

Claim 30 (Canceled)

31. (Original) The method according to claim 26 wherein the metal is titanium, yttrium or copper.

Claims 32-33 (Canceled)

34. (Previously Presented) The method according to claim 26 wherein the metal-ceramic composite has a major component and the major component makes up greater than about 50% of the composite.

35. (Previously Presented) The method according to claim 26 wherein the metal-ceramic based composite includes metallic phases, intermetallic phases, oxides, nitrides, carbides or silicates.

36. (Previously Presented) The method according to claim 35 wherein the metallic phases, intermetallic phases and oxides include  $\text{Ti(Al}_2\text{O}_3)$ ,  $\text{Ti}_3\text{Al(O)}$  and  $\text{TiAl(O)}$  and  $\text{Al}_2\text{O}_3$ .

37. (Previously Presented) The method according to claim 26 wherein the ceramic component that increases in size is  $\text{Al}_2\text{O}_3$ .

Claims 38-46 (Canceled)

47. (Previously Presented) The method according to claim 37 wherein the mean particle size of the  $\text{Al}_2\text{O}_3$  is increased by the heat treatment which brings about coarsening of the  $\text{Al}_2\text{O}_3$  particles.

48. (Previously Presented) The method according to claim 26 wherein the step of crushing the metal-ceramic based composite following heat treatment results in the formation of a powder and also a decrease in the size of a component in comparison to other components.

49. (Previously Presented) The method according to claim 48 wherein the metal-based ceramic composite is crushed and milled following heat treatment to form a powder and to decrease the size of a component in comparison to other components.

50. (Previously Presented) The method according to claim 49 wherein the crushing or crushing and milling occurs in an inert environment such as under argon or a vacuum.

51. (Previously Presented) The method according to claim 49 wherein the crushing time or crushing and milling time is limited to minimize reduction of the increased size of the component.

52. (Previously Presented) The method according to claim 48 wherein the powder is mixed with surfactant and water to produce a suspension for separation.

53. (Previously Presented) The method according to claim 26 wherein separation of the components is achieved by sedimentation, electrophoresis, electrostatic methods, chemical leaching, or the like.

54. (Previously Presented) The method according to claim 26 wherein the method produces a metal rich fraction in powder form having a volume fraction of the metal component greater than about 70%.

55. (Previously Presented) The method according to claim 54 wherein the volume fraction is greater than about 90%.

Application No. 10/522,054  
Amendment Dated August 27, 2008  
Reply to Office Action of June 9, 2008

56. (Previously Presented) The method according to claim 54 wherein the metal rich fraction collected following separation is reacted with a reducing agent.

57. (Previously Presented) The method according to claim 54 wherein the oxygen content of the metal rich fraction is less than about 1.5 atomic %.